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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,415	01/20/2000	GERARD CAILLE	Q057408	5068

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EXAMINER
MEHRPOUR, NAGHMEH

ART UNIT	PAPER NUMBER
2685	9

DATE MAILED: 12/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/462,415	Caille et al.
Examiner	**Art Unit**
Naghmeh Mehrpour	2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Sep 23, 2002* .

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-19* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-8, 9-14, 17-19**, are rejected under 35 U.S.C. 103(a) as being unpatentable Ishida et al (US Patent Number 5,926,466) in view of Yandrofski et al. (US Patent Number 6,205,340 B1).

Regarding **Claims 1- 3, 7, 10, 17-19,** Ishida teaches a circuit for receiving microwaves, the circuit comprising radiating means 1 for receiving microwaves, filter 26 means for eliminating microwaves transmitted at different frequencies by the radiating means, means for amplifying received microwaves, the filter means and means for amplifying being at least two filters (21, 23, 26, 3, 5, 9) and amplifier (20, 24, 25, 4, 10) stages connected to the radiating means and the first stages comprising a filter whose rejectivity for transmit frequencies is a fraction, of the total rejection needed to eliminate the transmit frequencies and the amplifier stages comprising an amplifier, the amplifier has as a gain a fraction of the total gain of the circuit, said filter amplifier stages applying progressive filtering and amplification (See figure 1 numerals 20, 21, 23, 24, 25, 26, 3, 5, 9, Page 1 paragraph 57). Ishida fails teach that the filter is planar filter. However Yandrofski teaches Planar filters are commonly used in transceiver devices. Filters are used to

suppress unwanted frequencies or noise, and sensitivity of mobile station is -110 dBm at a 3 % bit-error rate (BER) for digital and-116 dBm at 12 dB signal- to- noise ratio and distortion for analog, by using planar filters allowing more complex filter functions to be performed without significant loss in sensitivity of antenna (Column 4 lines 12-17, Column 15 lines 5-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the above teaching of Yandrofski to Ishida, in order to decrease interference to noise ratio and allowing minimum loss in sensitivity of the mobile receiver for purpose of having better quality communication system.

Regarding **Claim 6,** Ishida teaches a circuit wherein the stage that is far from the radiating means is in the form of an integrated circuit (See figure 1).

Regarding **Claim 8,** Ishida teaches a circuit that the substrate for filter of the first stage has a matrix of a flexible organic material (Page 2 lines 17-18). Ishida fails teach that the filter is planar filter. However Yandrofski teaches Planar filters are commonly used in transceiver devices (Column 4 lines 12-17, Column 15 lines 5-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the above teaching of Yandrofski to Ishida, in order to reduce noise, because filters are used to suppress unwanted frequencies or noise, by using small size of superconducting planar filters allowing filters function and perform without significant loss in sensitivity.

Regarding **Claim 12,** Ishida teaches circuit characterized in that the intermediate stage and the first stage are made on the same substrate (See figure 1).

Regarding **Claims 4, 14,** the combination of Ishida and Yandrofski does not specifically teaches a circuit which eliminate the transmit (or receive) frequencies is in the order of 50 dB, 11.7 GHz to 12.55 GHz and the rejectivity of the filter of the first stage is in the order of 14 dB, and transmit frequencies are in the band from 14 GHz to 14.3 GHz. However Examiner takes official notice that a circuit characterized in that the total rejectivity needed to eliminate the transmit (or receive) frequencies is in the order of 50 dB, or 11.7 GHz to 12.55 GHz band and the rejectivity of the filter of the first stage is in the order of 14 dB, or transmitting from 14 GHz to 14.3 GHz are matter of engineer's design choice. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the above teaching to the combination of Ishida and Yandrofski, in order to provide a system with better quality performance less noise.

Regarding **Claims 5, 11, 13,** Ishida teaches a circuit that the amplifier of the first stage comprises at least one transistor (Column 4 lines 53-59). The combination of Ishida and Yandrofski does not specifically mentioned that stage is of hybrid form and the transistor comprises; a semiconductor die with no packaging disposed on the substrate which the planar filter is implemented. However Examiner takes official notice that stage is of hybrid form and the transistor comprises a semiconductor die with no packaging disposed on the substrate is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the above teaching to the combination of Ishida and Yandrofski, in order to provide a system with less interference.

Regarding **Claim 9,** the combination of Ishida and Yandrofski does not specifically mention that a circuit wherein the substrate contains glass fibers for mechanical reinforcement and a dielectric. However a circuit that the substrate contains glass fiber is conventional and is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the above teaching to the combination of Ishida Yandrofski, in order to provide a good quality system.

3. **Claims 15-16,** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. (US Patent Number 5,926,466) and Yandrofski et al. (US Patent Number 6,205,340) in view of Chung (US Patent Number 6,297,774 B1).

Regarding **Claim 15,** the combination of Ishida and Yandrofski fails to teach a circuit characterized in that the microwaves transmitted and received are orthogonally polarized, in particular with circular polarizations in opposite directions. However Chung teaches a circuit that microwaves transmitted/received are orthogonally polarized, in particular with circular polarizations in opposite directions (Column 1 lines 44-54) Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the above teaching of Chung to the combination of Ishida and Yandrofski, in order to provide a system that has high efficiency and excellent cross polarization performance over a wide frequency bandwidth and achieve low manufacture cost.

Regarding **Claim 16,** the combination of Ishida and Yandrofski fails to teach a circuit wherein the planar filter is implemented in the microstrip or suspended triplate technology. However Chung

teaches a circuit characterized in that the planar filter is implemented in the microstrip or suspended triplate technology (Column 1 lines 24-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the above teaching of Chung to the combination of Ishida and Yandrofski, in order to minimize the size and weight of the antenna for providing lower cost.

Response to Arguments

4. Applicant's arguments filed 9/23/02 regarding claims 1-14, 17-19 have been fully considered but they are not persuasive.

5 Applicant's arguments with respect to claims 15-16 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that, *"Ishida teaches a circuit with several filters and several amplifiers alternating in series. There are also, however, mixers and local oscillators along the way, performing frequency conversions. Thus, the filters are clearly operating different frequencies. This is quit different from the claimed", "progressive filtering and amplification". Yandrofski constitutes a second reference which teaches a adding planar filters into circuit of Ishida would still lead to a circuit which performs multiple frequency changes, thus a circuit quit different from the claimed invention. Any circuit based on the teachings of Ishida will necessarily lack the requirement of the claim 1 for "progressive filtering and amplification*, If Ishida and Yandrofski structures are capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a

manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

In response to the applicant's argument that "*the Examiner asserted that Yandrofski compensates for the acknowledged deficiency of Ishida (no planar filter) by virtue of a teaching that 'planar filters are commonly used in transceiver devices", and Examiner indicated that subject matter at column 5 lines 5-7 of Yandrofski.*

Examiner responses that the indication of Examiner regarding Column 5, lines 5-7 of Yandrofski was a typographical error. Yandrofski teaches "planar filter" in column 15, lines 5-7.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d

1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Ishida in figure 1, teaches a circuit comprising: receiver 1 for receiving microwaves, filter 26 s for eliminating microwaves transmitted at different frequencies, means for amplifying received microwaves, the filters (21, 23, 26, 3, 5, 9) and amplifiers (20, 24, 25, 4, 10) connected to the radiating means and a first stages comprising a filter whose rejectivity for transmit frequencies is a fraction, of the total rejection needed to eliminate the transmit frequencies and the amplifier stages comprising an amplifier, the amplifier has as a gain a fraction of the total gain of the circuit, said filter amplifier stages applying progressive filtering and amplification (See figure 1 numerals 20, 21, 23, 24, 25, 26, 3, 5, 9, Page 1 paragraph 57). Ishida fails teach that the filter is planar filter. However Yandrofski teaches that the Planar filters are commonly used in transceiver devices (Column 15 lines 5-7). Yandrofski teaches using cryoelectronic equipment to implement an extremely sensitive receiver end for UHF, microwave, millimeter wave applications and environment (abstract, col 4 lines 12-21, col 15 lines 5-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use planar filter of Yandrofski in Ishida's microwave environment, in order to provide maximize filter performance.

Applicant's argues that "*there is no teaching in Yandrofski that would have motivated the person of ordinary skill confronted with the problem of reducing expenses in user antenna, to have inserted Yandrofski component into the Ishida apparatus*".

Examiner states that the purpose of using Yandrofski component as mentioned on above rejection, to provide minimum loss in receiver sensitivity of the mobile and Base Station. For the

purpose of the stronger response, Examiner uses an additional reference (Carter 6,477,376). In designing wireless communication system maximum allowable loss between mobile phone and the base station antenna determined. The maximum allowable loss in the maximum drop in signal level between the mobile unit and the cell site antennas, before the link fails. A link analysis calculation is performed to determine the maximum allowable link loss. The link analysis calculation will take into account uplink characteristic such as the mobile phone power, environment carrier to noise, receiver sensitivity, and the minimum required carrier to interference ratio to come up with a maximum allowable loss in decibels (col 3 lines 1-10, col 4 lines 21-30). Therefore system performance is depend on reducing signal to noise ratio while having minimum loss in sensitivity of mobile and base station antennas.

Applicant's argued that "*Maximizing filter performance would not result in the combination of Ishida and Yandrofski*".

Examiner states that filters are used to suppress unwanted frequencies or noise, by using small size of superconducting planar filters, which are allowing to functions and performs without significant loss in sensitivity. Therefore by Maximizing filter performance, means to not to loss receiver sensitivity.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Carter (US Patent 6,477,376 B1) disclose method for designing wireless communications cell sites using uplink parameters

5. **Any responses to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications indented for entry)

Or:

(703) 308-6306, (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II. 2121 Crystal Drive, Arlington. Va., sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Melody Mehrpour whose telephone number is (703) 308-7159. The examiner can normally be reached on Monday through Thursday (first week of bi-week) and Monday through Friday (second week of bi-week) from 6:30 a.m. to 5:00 p.m.

NM

Nov 25, 2002

12/2/02

LESTER G. KINCAID
PRIMARY EXAMINER